<u>REMARKS</u>

Prior to entry of the present amendment, claims 1-110 were pending in the present application. Claims 1, 8, 9, 16, 21-24, 26, 34, 35, 37, 40, 41, 56, 63, 64, 71, 76-79, 81, 89, 90, 92, 95, and 96 are amended above. New claims 111 and 112 are added. Claims 33 and 88 are canceled. No new matter is added by the claim amendments or new claims. Entry is respectfully requested.

Paragraph 2 of the Office Action indicates that the Information Disclosure Statement filed 25 November 2002 fails to comply with 37 CFR 1.98(a)(1), which requires five enumerated components (1) through (5). It is believed that the Information Disclosure Statement filed 25 November 2002 meets all five of the stated requirements in that the Information Disclosure Statement filed 25 November 2002 included a sixteen (16) page PTO-1449 document. A copy of the Information Disclosure Statement, including the corresponding PTO-1449 document submitted on that date, is enclosed with the present Amendment. If new copies of the references submitted on that date along with the Information Disclosure Statement are required, the Examiner is invited to telephone the undersigned The Applicants respectfully request that an initialed copy of the submitted documents be included with the next official paper transmitted·by the Office as confirmation of receipt of the Information Disclosure Statement, and as confirmation of consideration of the listed references.

Paragraphs 4 and 5 of the Office Action indicate that the claim for domestic priority to provisional application 60/313,952 (the '952 application) was denied for failure to provide an . enabling disclosure. It is submitted that a prima-facie case of lack of enablement has not been established. In particular, no reasonable basis to question the enablement of the invention provided by the specification of the '952 provisional application has been established. Manual of Patent Examining Procedure (M.P.E.P.) 2164.04, paragraphs 1 and 2, citing *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed.Cir. 1993). No reasons are given in the Office, Action for the uncertainty of the enablement. *See* M.P.E.P. 2164.04, paragraph 3, citing *In re*

*Bowen*, 492 F.2d 859, 862-63, 181 USPQ 48, 51 (CCPA 1974). In addition, no technical reasons for the rejection are provided. *See* M.P.E.P. 2164.04, paragraphs 4-6.

In any event, the applicant submits that the '952 application enables the present invention as claimed. In particular, with regard to independent claim 1 the '952 application teaches that media can be provided with certain attributes that cause a transfer rate of data read from a drive to be modified, at least at page 2, paragraph 4 as filed:

> "Such media could be treated with a state changing substance ... and can also be modified to have punctuate discontinuities and grooves covered in these earlier patent claims, or can be modified in other ways which result in the following attributes of the final media:
> - known areas of perfect data, readable at highest supported drive speeds
> - known areas of data which contain subtle corrected errors which cause the drive to slow down while reading, even when all device error correction is disabled at the device level..."

In addition, a description of monitoring the transfer rate of the read data from the media device to the computing device resulting from the reading of data stored on the digital medium at a physical location of the medium, wherein the data rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation, is provided in the '952 application as filed at least at page 3, paragraph 4:

> "The true speed of the drive is determined by using the following method:
> Historical buffer of previous reads averaged over time taking into account time lost outside our code by OS can be accounted for to smooth out data performance spikes which are far faster than a drive can read, which would otherwise skew the average, and compare the current rotation and determine if there is a true slowdown. With such averaging it becomes clear when a real slowdown occurs."

A teaching of the determination at the computing device, from a monitored transfer rate, of the presence of an anomaly region on the digital medium corresponding to the physical location of

the data on the digital medium by identifying a modification in the transfer rate of the read data

from the media device to the computing device is provided in the '952 application as filed at least

at page 3, paragraphs 1 and 2:

> "Thus an original disc can be distinguished:
>     - it reads fast in a location that was expected to read fast
>     - it reads slow in a location that was expected to be slow ...
>     - it reads incorrectly ... or not at all in specific locations that were expected to fail
>
> And a copy can be distinguished similarly:
>     - it reads slow in a location that was expected to read fast
>     - it reads fast in a location that was expected to be slow
>     - it reads correctly in specific locations that were expected to fail or change
>     state
>     - the transition between high speed reading and a known and expected
>     error or state change location occurs too abruptly with no slowdown "

Identification of the solution provided by the present invention as claimed, including

authentication of the digital medium based on a characteristic of an anomaly region is provided

in the '952 application as filed at least at page 2, paragraph 5:

> "The essence of this solution is that all known devices still slow and retry even
> when all device error correction is disabled at the device level, therefore, they will
> slow and succeed at reading an area, and such area, in a copy will be perfect and
> will result in no slowdown in reading."

A further discussion of the solution provided by the present invention as claimed, including

authentication of the digital medium based on a characteristic of an anomaly region is provided

in the '952 application as filed at least at page 3, paragraph 5:

> "The process of reading CD, CD-R, CD-RW, DVD, DVD-R or other optical media in a
> fashion that disallows drive error correction, and which provides accurate and true
> measurement of the drive's speed both historically and at the moment, allowing for other
> system tasks and events, to allow for certain knowledge that the media had certain known
> performance characteristics in terms of read-speed and read-location, to be able to

distinguish between original media and copied media by comparing these performance measurements with expected drive performance measurements."

In view of the above, it is submitted that the '952 application enables the present invention as claimed in at least independent claim 1. For similar reasons, it is submitted that the '952 application also enables the present invention as claimed in at least independent claim 56. Reconsideration and removal of the denial of the priority claim to the '952 application are therefore respectfully requested.

Paragraphs 6 and 7 of the Office Action indicate that the claim for domestic priority to provisional application 60/340,506 (the '506 application) was denied for failure to provide an enabling disclosure. It is submitted that a prima-facie case of lack of enablement has not been established. In particular, no reasonable basis to question the enablement of the invention provided by the specification of the '506 provisional application has been established. Manual of Patent Examining Procedure (M.P.E.P.) 2164.04, paragraphs 1 and 2, citing *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed.Cir. 1993). No reasons are given in the Office Action for the uncertainty of the enablement. *See* M.P.E.P. 2164.04, paragraph 3, citing *In re Bowen*, 492 F.2d 859, 862-63, 181 USPQ 48, 51 (CCPA 1974). In addition, no technical reasons for the rejection are provided. *See* M.P.E.P. 2164.04, paragraphs 4-6.

In any event, the applicant submits that the '506 application enables the present invention as claimed. In particular, with regard to independent claim 1 the '506 application teaches that media can be provided with certain attributes that cause a transfer rate of data read from a drive to be modified, at least at page 2, paragraphs 4 and 5 as filed:

> "Such media has attributes which affect (sic) the manner in which it is read by
> optical media reading devices and the performance aspects of these read
> operations can be measured, quantified and used as an identifying signature for
> the media, In other words, areas of the media may have attributes of slowdown in

the reading process which are unique and measurable and whose attributes do not necessarily completely copy via bit for bit copy means:

> Such discs can have some or all of the following attributes:
> - known areas of perfect data, readable at highest supported drive speeds and/or
> - known areas of data which contain subtle corrected errors which cause the drive to slow down while reading, even when all device error correction is disabled at the device level..."

In addition, a description of monitoring the transfer rate of the read data from the media device to the computing device resulting from the reading of data stored on the digital medium at a physical location of the medium, wherein the data rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation, is provided in the '506 application as filed at least at page 4, paragraph 1:

> "The true speed of the drive is determined by using the following method: Historical buffer of previous reads averaged over time taking into account time lost outside our code by OS can be accounted for to smooth out data performance spikes which are far faster than a drive can read, which would otherwise skew the average, and compare the current rotation and determine if there is a true slowdown. With such averaging it becomes clear when a real slowdown occurs."

A teaching of the determination at the computing device, from a monitored transfer rate, of the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device is provided in the '506 application as filed at least at page 3, paragraphs 2 and 3:

> "Thus an original disc can be distinguished:
> - it reads fast in a location that was expected to read fast and/or
> - it reads slow in a location that was expected to be slow ... and/or

- it reads incorrectly or not at all in specific locations that were expected to fail

And a copy can be distinguished similarly.:
- it reads slow in a location that was expected to read fast
and/or
- it reads fast in a location that was expected to be slow
and/or
- it reads correctly in specific locations that were expected to fail
and/or
- the transition between high speed reading and a known and expected error or state change location occurs too abruptly with no slowdown "

Identification of the solution provided by the present invention as claimed, including authentication of the digital medium based on a characteristic of an anomaly region is provided in the '506 application as filed at least at page 3, paragraph 1:

"The essence of this solution is that all known devices still slow and retry even when all device error correction is disabled at the device level, therefore, they will slow and succeed at reading an area, and such area, in a copy will be perfect and will result in no slowdown in reading."

A further discussion of the solution provided by the present invention as claimed, including authentication of the digital medium based on a characteristic of an anomaly region is provided in the '506 application as filed at least at page 4, paragraph 2:

"The process of reading CD, CD-R, CD-RW, DVD, DVD-R or other optical media in a fashion that disallows drive error correction, and which provides accurate and true measurement of the drive's speed both historically and at the moment, allowing for other system tasks and events, to allow for certain knowledge that the media had certain known performance characteristics in terms of read-speed and read-location, to be able to distinguish between original media and copied media by comparing these performance measurements with expected drive performance measurements."

In view of the above, it is submitted that the '506 application enables the present invention as claimed in at least independent claim 1. For similar reasons, it is submitted that the '506 application also enables the present invention as claimed in at least independent claim 56.

Reconsideration and removal of the denial of the priority claim to the '506 application are therefore respectfully requested.

Claims 1, 2, 4-11, 13, 14, 16-19, 21-28, 30, 32-36, 40-46, 56, 57, 59-66, 68, 69, 71-74, 76-83, 85, 87-91 and 95-101 are rejected as being anticipated by Carson (U.S. Patent No. 6,477,124). Claims 3, 29, 58 and 84 are rejected as being unpatentable over Carson. Claims 12, 15, 20, 47, 67, 70, 75 and 102 are rejected as being unpatentable over Carson in view of Kamoto, *et al.* (U.S. Patent No. 5,708,649 - hereinafter "Kamoto"). Claims 31 and 86 are rejected as being unpatentable over Carson in view of Watanabe, *et al.* (U.S. Patent No. 6,775,227 - hereinafter "Watanabe"). Claims 37-39 and 92-94 are rejected as being unpatentable over Carson in view of Dubois, *et al.* (U.S. Publication No. 2002/0142248). Claims 48-55 and 103-110 are rejected as being unpatentable over Carson in view of Imai, *et al.* (U.S. Patent No. 5,799,145 - hereinafter "Imai"). Reconsideration and removal of the rejections are respectfully requested.

The present invention as claimed in independent claim 1 is directed to a method for authenticating a digital medium. A read operation of data from a media device is requested at a computing device. A transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, is monitored. The transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation. The presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium is determined, at the computing device, from the monitored transfer rate, by identifying a modification in the transfer rate of the read data from the media device to the computing device. The digital medium is authenticated based on a characteristic of the anomaly region.

The present invention as claimed in independent claim 56 is directed to a system for authenticating a digital medium. A computing device requests a read operation of data from a media device. A monitor monitors a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium. The transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation. The computing device includes an anomaly detector that determines, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device. An authenticator authenticates the digital medium based on a characteristic of the anomaly region.

In the present invention as claimed in claims 1 and 56, the "transfer rate" of read data that is monitored is the rate at which data are transferred from the media device to the computing device resulting from the requested read operation. An example of this feature is provided in the specification as filed at least at FIG. 10 and the corresponding discussion at page 27, line 7 - page 29, line 23. In this example, computing device 73 requests a read operation of data from a media device 72 including a medium 74. In response to the read request, a data stream 78 is returned to the computing device 73. The transfer rate of the returned data stream 78 is monitored at transfer rate analysis unit 82. The computing device 73 determines, from the monitored transfer rate, whether anomaly region 75 is present on the medium 74. For example, the behavior of the transfer rate over time, as shown in the example of FIG. 3 of the present specification, can be monitored and analyzed, and a decision as to the presence of an anomaly region 75 can be made by the computing device 73 based on modifications to the transfer rate. An authentication of the digital medium 74 can then be performed 83 based on a characteristic of the anomaly region.

Carson is directed to a system and method for controlling access to an optical disc, based on the frequency at which data is recorded on the disc. Carson relies on a deliberate change in the effective lengths of pits and lands that specifically affect the operation of the drive to require the drive to reduce or increase its rotational velocity. This operation by the drive is in response to what would otherwise appear to be slow data frequency or fast data frequency, relative to the nominal data frequency of the remainder of the disc. Thus, the "data rate" that Carson refers to is the rate at which data symbols in the form of pits and lands are presented to the readback head assembly, as a result of deliberate variations in the angular velocity of the disc when the data are recorded on the disc or the master that is used to stamp the disc, and as a result of the readback system's reaction to such variations. When a readback system determines that the current angular velocity of the disc is insufficient for the present data being read, the readback system loses "frequency lock" and automatically makes an adjustment in the angular velocity in an effort to recapture frequency lock. In Carson, the data rate of the recorded data is deliberately varied, so that when a readback operation of the data takes place, the readback system is forced to respond to the variation in the data rate by varying the angular velocity of the readback system in order to maintain frequency lock during readback. The Carson approach analyzes the variations in the angular velocity during readback, and makes decisions regarding user access to the data stored on the disc based on the analysis.

Carson fails to teach or suggest the present invention as claimed in independent claims 1 and 56. In particular, Carson fails to teach or suggest "monitoring a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation", as claimed in claim 1. Carson further fails to teach or suggest "a monitor that monitors a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements

per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation", as claimed in claim 56. Instead, Carson teaches analysis of what is referred to in Carson as the "data rate" during readback, a rate that is directly related to the rotational velocity of disc during readback, attributable to the deliberate lengthening or shortening of symbols in the form of pits and lands on the disc during recording of the data on the disc. The Carson readback "data rate" is not the same as the "transfer rate" of the present invention of claims 1 and 56, that is, the rate at which read data are returned from the media device to the computing device.

Carson further fails to teach or suggest "determining, at the computing device, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device" as claimed in claim 1, and "an anomaly detector at the computing device that determines, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device", as claimed in claim 56. Carson does not make data access decisions based on the transfer rate of read data from the Carson readback system 140. Nor does Carson identify modifications in such a transfer rate. There is no teaching or suggestion in Carson that the Carson output data 158, that is the output data stream 158 that is returned to the requesting computing device, is monitored in this manner. Instead, in Carson, the "data rate" of data recorded on the disc, is monitored based on the change in angular velocity of the readback system during readback.

Claims 1 and 56 are therefore believed to be in condition for allowance, and such allowance is respectfully requested. With regard to the rejection of dependent claims 2, 3, 4-11, 13, 14, 16-19, 21-28, 29, 30, 32-36, 40-46, 57, 58, 59-66, 68, 69, 71-74, 76-83, 84, 85, 87-91 and

95-101, it is submitted that these claims should inherit the allowability of independent claims 1 and 56 from which they depend.

With regard to the rejection of former claims 12, 15, 20, 47, 67, 70, 75, and 102 in view of the combination of Carson and Kamoto, it is submitted that, like Carson, Kamoto fails to teach or suggest "monitoring a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation", and "determining, at the computing device, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device" as claimed in claim 1. It is further submitted that like Carson, Kamoto fails to teach or suggest "a monitor that monitors a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation", and "an anomaly detector at the computing device that determines, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device", as claimed in claim 56. Since neither Carson nor Kamoto teach or suggest the stated limitations, there is no combination of the references that would teach or suggest the stated limitations. Accordingly, reconsideration and removal of the rejection of former claims 12, 15, 20, and 47, as may be applied to amended independent claim 1, and reconsideration and removal of the rejection of former claims 67, 70, 75, and 102, as may be applied to amended independent claim 56, and allowance of such claims, are respectfully requested.

With regard to the rejection of former claims 31 and 86 in view of the combination of Carson and Watanabe, it is submitted that, like Carson, Watanabe fails to teach or suggest "monitoring a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation", and "determining, at the computing device, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device" as claimed in claim 1. It is further submitted that like Carson, Watanabe fails to teach or suggest "a monitor that monitors a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation", and "an anomaly detector at the computing device that determines, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device", as claimed in claim 56. Since neither Carson nor Kamoto teach or suggest the stated limitations, there is no combination of the references that would teach or suggest the stated limitations. Accordingly, reconsideration and removal of the rejection of former claim 31, as may be applied to amended independent claim 1, and reconsideration and removal of the rejection of former claim 86, as may be applied to amended independent claim 56, and allowance of such claims, are respectfully requested.

With regard to the rejection of former claims 37-39 and 92-94 in view of the combination of Carson and Dubois, it is submitted that, like Carson, Dubois fails to teach or suggest

"monitoring a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation", and "determining, at the computing device, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device" as claimed in claim 1. It is further submitted that like Carson, Dubois fails to teach or suggest "a monitor that monitors a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation", and "an anomaly detector at the computing device that determines, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device", as claimed in claim 56. Since neither Carson nor Dubois teach or suggest the stated limitations, there is no combination of the references that would teach or suggest the stated limitations. Accordingly, reconsideration and removal of the rejection of former claims 37-39, as may be applied to amended independent claim 1, and reconsideration and removal of the rejection of former claims 92-94, as may be applied to amended independent claim 56, and allowance of such claims, are respectfully requested.

With regard to the rejection of former claims 48-55 and 103-110 in view of the combination of Carson and Imai, it is submitted that, like Carson, Imai fails to teach or suggest "monitoring a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements per unit time, at which read data elements are
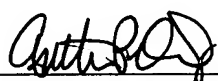
returned from the media device to the computing device in response to the requesting of the read operation", and "determining, at the computing device, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device" as claimed in claim 1. It is further submitted that like Carson, Imai fails to teach or suggest "a monitor that monitors a transfer rate of read data from the media device to the computing device resulting from the reading of data stored on a digital medium at a physical location of the medium, wherein the transfer rate is a rate, in data elements per unit time, at which read data elements are returned from the media device to the computing device in response to the requesting of the read operation", and "an anomaly detector at the computing device that determines, from the monitored transfer rate, the presence of an anomaly region on the digital medium corresponding to the physical location of the data on the digital medium by identifying a modification in the transfer rate of the read data from the media device to the computing device", as claimed in claim 56. Since neither Carson nor Imai teach or suggest the stated limitations, there is no combination of the references that would teach or suggest the stated limitations. Accordingly, reconsideration and removal of the rejection of former claims 48-55, as may be applied to amended independent claim 1, and reconsideration and removal of the rejection of former claims 103-110, as may be applied to amended independent claim 56, and allowance of such claims, are respectfully requested.

Closing Remarks

It is submitted that all pending claims are in condition for allowance, and such allowance is respectfully requested. If prosecution of the application can be expedited by a telephone conference, the Examiner is invited to call the undersigned at the number given below.

Respectfully submitted,

Date: ___March 7, 2006___

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